

WHAT IS CLAIMED IS:

1. A light emitting device comprising a light emitting element comprising an organic compound, wherein an oxygen concentration in the light emitting element is equal to
5 or less than $1 \times 10^{19}/\text{cm}^3$.

2. A light emitting device comprising a layer comprising an organic compound formed between an anode and a cathode, wherein an oxygen concentration in the layer comprising the organic compound is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

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3. A light emitting device comprising a light emitting layer comprising an organic compound formed between an anode and a cathode, wherein an oxygen concentration in the light emitting layer is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

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4. A light emitting device comprising a material selected from the group consisting of a phthalocyanine-based organic compound and an aromatic amine-based organic compound, wherein a concentration of oxygen in the material is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

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5. A light emitting device comprising a material selected from the group consisting of a hole injecting layer comprising a phthalocyanine-based organic compound and a hole transporting layer comprising an aromatic amine-based organic compound,

wherein a concentration of oxygen in the material is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

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6. A light emitting device comprising a material selected from the group consisting of a hole injecting layer comprising a phthalocyanine-based organic compound, a hole transporting layer comprising an aromatic amine-based organic compound, and a light emitting layer comprising a carbazole-based organic compound:

30 wherein a concentration of oxygen in the material and a vicinity of the material is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

7. A light emitting device comprising:

a first insulating layer comprising a silicon nitride or a silicon oxynitride:

a light emitting element formed over the first insulating layer, the light emitting element comprising:

an anode;

a layer comprising an organic compound in contact with the anode; and

5 a cathode in contact with the layer comprising the organic compound; and

a second insulating layer comprising a carbon over the light emitting element;

wherein a concentration of oxygen in the layer comprising the organic compound is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

10 8. A light emitting device comprising:

a first insulating layer comprising a silicon nitride or a silicon oxynitride;

a light emitting element formed over the first insulating layer, the light emitting element comprising:

an anode;

15 a layer comprising an organic compound in contact with the anode, comprising a light emitting layer; and

a cathode in contact with the layer comprising the organic compound; and

a second insulating layer comprising a carbon over the light emitting element; and

20 wherein a concentration of oxygen in the emitting element and in a vicinity of the light emitting layer is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

9. A light emitting device comprising:

a first insulating layer comprising a silicon nitride or a silicon oxynitride;

25 a light emitting element formed over the first insulating layer, the light emitting element comprising:

an anode;

a layer selected from the group consisting of a hole injecting layer comprising a phthalocyanine-based organic compound and a hole transporting layer comprising an aromatic amine-based organic compound. in contact with the anode;

30 and

a cathode in contact with the layer; and

a second insulating layer comprising a carbon over the light emitting element; and wherein a concentration of oxygen in the layer is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

10. A light emitting device comprising:
a first insulating layer comprising a silicon nitride or a silicon oxynitride;
a light emitting element formed over the first insulating layer, the light emitting element comprising:

5 an anode;

a layer selected from the group consisting of a hole injecting layer comprising a phthalocyanine-based organic compound, a hole transporting layer comprising an aromatic amine-based organic compound, and a light emitting layer comprising a carbazole-based organic compound, in contact with the anode; and

10 a cathode in contact with the layer; and

a second insulating layer comprising a carbon over the light emitting element; and wherein a concentration of oxygen in the layer is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

11. A light emitting device comprising:

15 a first insulating layer comprising a silicon nitride or a silicon oxynitride;

a second insulating layer comprising a silicon oxynitride;

a semiconductor layer comprising a silicon of a thin film transistor located between the first insulating layer and the second insulating layer;

20 a third insulating layer comprising a silicon nitride or a silicon oxynitride over the second insulating layer;

a fourth insulating film comprising a carbon over the second insulating layer;

wherein an anode, a layer comprising an organic compound, and a cathode comprising an alkaline metal are located between the third insulating layer and the fourth insulating layer; and

25 wherein a concentration of oxygen in the layer comprising an organic compound is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

12. A light emitting device comprising:

a first insulating layer comprising a silicon nitride or a silicon oxynitride;

30 a second insulating layer comprising a silicon oxynitride;

a semiconductor layer comprising a silicon of a thin film transistor located between the first insulating layer and the second insulating layer;

a third insulating layer comprising a silicon nitride or a silicon oxynitride over the second insulating layer;

a fourth insulating film comprising a carbon over the second insulating layer;
wherein an anode, a layer comprising an organic compound, and a cathode comprising an alkaline metal are located between the third insulating layer and the fourth insulating layer;

5 wherein the layer comprising the organic compound comprises a light emitting layer; and

wherein a concentration of oxygen in the light emitting layer and in a vicinity of the light emitting layer is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

10 13. A light emitting device comprising:

a first insulating layer comprising a silicon nitride or a silicon oxynitride;

a second insulating layer comprising a silicon oxynitride;

a semiconductor layer comprising of a thin film transistor located between the first insulating layer and the second insulating layer;

15 a third insulating layer comprising a silicon nitride or a silicon oxynitride over the second insulating layer;

a fourth insulating layer comprising a carbon over the second insulating layer;
an anode;

20 a layer selected from the group consisting of a hole injecting layer comprising a phthalocyanine-based organic compound, a hole transporting layer comprising an aromatic amine-based organic compound, and a light emitting layer comprising a carbazole-based organic compound, in contact with the anode;

a cathode comprising an alkaline metal;

25 wherein the anode, the layer, and the cathode are located between the third insulating layer and the fourth insulating layer; and

wherein a concentration of oxygen in the layer is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

14. The light emitting device according to claim 11, wherein an insulating layer comprising an organic resin is formed between the second insulating layer and the third
30 insulating layer.

15. The light emitting device according to claim 12, wherein an insulating layer comprising an organic resin is formed between the second insulating layer and the third insulating layer.

16. The light emitting device according to claim 13, wherein an insulating layer comprising an organic resin is formed between the second insulating layer and the third insulating layer.

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17. The light emitting device according to claim 1, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

18. The light emitting device according to claim 2, wherein the concentration of
10 oxygen is the lowest detectable by secondary ion mass spectrometry.

19. The light emitting device according to claim 3, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

15 20. The light emitting device according to claim 4, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

21. The light emitting device according to claim 5, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

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22. The light emitting device according to claim 6, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

23. The light emitting device according to claim 7, wherein the concentration of
25 oxygen is the lowest detectable by secondary ion mass spectrometry.

24. The light emitting device according to claim 8, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

30 25. The light emitting device according to claim 9, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

26. The light emitting device according to claim 10, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

27. The light emitting device according to claim 11, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

5 28. The light emitting device according to claim 12, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

29. The light emitting device according to claim 13, wherein the concentration of oxygen is the lowest detectable by secondary ion mass spectrometry.

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30. A method of manufacturing a light emitting device comprising the steps of:
forming a first insulating layer comprising a silicon nitride or a silicon oxynitride;
forming an anode comprising an oxide conductive material over the first insulating layer;

15 forming a second insulating layer covering edge portions of the anode;
forming a layer comprising an organic compound in contact with the anode and the second insulating layer;

forming a cathode comprising an alkaline metal in contact with the layer comprising an organic compound; and

20 forming a third insulating layer comprising a carbon over the cathode.

31. A method of manufacturing a light emitting device comprising the steps of:
forming a first insulating layer comprising a silicon nitride or a silicon oxynitride;
forming an anode comprising an oxide conductive material over the first insulating

25 layer;

forming a second insulating layer covering edge portions of the anode;

forming a layer selected from the group consisting of a hole transporting layer comprising an a phthalocyanine-based organic compound and a hole transporting layer comprising an aromatic amine-based organic compound in contact with the anode;

30 forming a cathode comprising an alkaline metal in contact with the layer comprising an organic compound; and

forming the third insulating layer comprising a carbon over the cathode.

32. A method of manufacturing a light emitting device comprising the steps of:

forming a first insulating layer comprising a silicon nitride or a silicon oxynitride;
forming an anode comprising an oxide conductive material over the first insulating film;

- forming a second insulating layer covering edge portions of the anode;
- 5 forming a layer selected from the group consisting of a hole transporting layer comprising a phthalocyanine-based organic compound, a hole transporting layer comprising an aromatic amine-based organic compound, and a light emitting layer comprising a carbazole-based organic compound, in contact with the anode and the second insulating layer;
- 10 forming a cathode comprising an alkaline metal in contact with the layer; and
forming the third insulating layer comprising a carbon over the cathode.

33. The method of manufacturing a light emitting device according to claim 30, wherein the method of manufacturing has a step of processing the surface of the second
15 insulating layer by plasma using an inert gas after completing the step of forming the second insulating layer.

34. The method of manufacturing a light emitting device according to claim 31, wherein the method of manufacturing has a step of processing the surface of the second
20 insulating layer by plasma using an inert gas after completing the step of forming the second insulating layer.

35. The method of manufacturing a light emitting device according to claim 32, wherein the method of manufacturing has a step of processing the surface of the second
25 insulating layer by plasma using an inert gas after completing the step of forming the second insulating layer.

36. The method of manufacturing a light emitting device according to claim 30, wherein the layer comprising the organic compound is formed by evaporation after pulling a
30 vacuum equal to or less than 4×10^{-6} Pa in the step of forming the layer comprising the organic compound.

37. The method of manufacturing a light emitting device according to claim 31, wherein the layer is formed by evaporation after pulling a vacuum equal to or less than

4×10^{-6} Pa in the step of forming the hole transporting layer.

38. The method of manufacturing a light emitting device according to claim 32, wherein the layer is formed by evaporation after pulling a vacuum equal to or less than
5 4×10^{-6} Pa in the step of forming the hole transporting layer and the light emitting layer.

39. A light emitting device comprising:
a substrate;
a first insulating layer over the substrate;
10 an anode over the first insulating layer;
a cathode over the first insulating layer;
an organic compound interposed between the anode and the cathode;
a second insulating layer over the anode and the cathode;
wherein the organic compound is interposed between the first insulating layer and
15 second insulating layer, and
wherein a concentration of oxygen in the organic compound is equal to or less than
 $1 \times 10^{19}/\text{cm}^3$.

40. A light emitting device comprising:
20 a substrate;
a first insulating layer over the substrate;
an anode over the first insulating layer;
a cathode over the first insulating layer;
an organic compound interposed between the anode and the cathode;
25 a diamond like carbon layer over the anode and the cathode;
a silicon nitride film formed below the diamond like carbon layer;
wherein the anode, the organic compound, and the cathode are interposed between
the first insulating layer and the diamond like carbon layer,
wherein a concentration of oxygen in the organic compound is equal to or less than
30 $1 \times 10^{19}/\text{cm}^3$.

41. A light emitting device comprising:
a substrate;
a first insulating layer over the substrate;

an anode formed on the first insulating layer;
a second insulating layer comprising an organic resin formed over the first insulating layer wherein at least a portion of the anode is not covered by the second insulating layer;
5 a gas barrier layer formed on the second insulating layer wherein the gas barrier layer extends beyond a side edge of the second insulating layer to cover a portion of the anode;
an organic compound layer formed over the anode and the gas barrier layer;
a cathode formed on the organic compound layer; and
10 a third insulating film formed on the cathode,
wherein a concentration of oxygen in the organic compound is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

42. A light emitting device comprising:
15 a first substrate;
a first insulating layer over the first substrate;
an anode over the first insulating layer;
a cathode over the first insulating layer;
an organic compound interposed between the anode and the cathode;
20 a second insulating layer over the anode and the cathode;
a second substrate sealed with the first substrate through a sealing material;
a barrier film adjacent to the sealing material
wherein the anode, the organic compound, and the cathode are interposed between the first insulating layer and the second insulating layer,
25 wherein a concentration of oxygen in the organic compound is equal to or less than $1 \times 10^{19}/\text{cm}^3$.

43. A device according to claim 39, the second insulating layer is selected from the group consisting of a diamond like carbon, a silicon nitride, and a silicon oxynitride.

30 44. A device according to claim 41, the second insulating layer is selected from the group consisting of a diamond like carbon, a silicon nitride, and a silicon oxynitride.

45. A device according to claim 42, the second insulating layer is selected from the

group consisting of a diamond like carbon, a silicon nitride, and a silicon oxynitride.

46. A device according to claim 39, a silicon nitride film is formed below the second insulating layer.

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47. A device according to claim 41, a silicon nitride film is formed below the second insulating layer.

48. A device according to claim 42, a silicon nitride film is formed below the
10 second insulating layer.

49. A device according to claim 41, the gas barrier layer comprises a silicon nitride.

50. A device according to claim 42, the barrier film comprises a diamond like
15 carbon.